

R E P O R T

LAID BEFORE THE
RIVER BOYNE COMPANY,

April 26th 1797,

By DANIEL MONKS, ENGINEER,

TO WHICH IS PREFIXED

T H E R E S O L U T I O N S

O F T H E

GRAND JURY OF THE COUNTY MEATH,
AT LENT ASSIZES 1797.

PRINTED BY J. AND A. B. KING,

No. 72, Dame-street.

ROBERT CODD
7-23-40 Lot

357937

20th April 1797.

BOYNE NAVIGATION.

At a Meeting of the River Boyne Company,
held in Trim this Day,

SIR FRANCIS HOPKINS, BART. in the Chair,

Mr. Monks having laid his second Report on the Northern Line Navigation before the Board, together with plans and estimates of two different kinds of canal,

RESOLVED, that we highly approve of the plan he produced for making a small canal for four-ton boats.

RESOLVED, that John Ruxton, Esq; High Sheriff for this county, be requested to lay the same before the Grand Jury, and obtain their opinion thereof.

The High Sheriff having laid the said plan before the Grand Jury, and they having taken the same into consideration, he returned with the following Resolutions, which were ordered to be printed, with Mr. Monks's Report.

SIGNED,

ISHAM BAGGS, Sec.

RESOLUTIONS.

*Grand Jury of the County of Meath, at
Lent Assizes 1797.*

A plan and section of a canal from Dublin to Castlepole, North of Kells, (being part of a very extensive intended line of Navigation through the North of Ireland) having been offered to our consideration by the River Boyne Company,

RESOLVED, that a navigation, such as has been described to us, communicating with the trading towns in the North of Ireland, and passing through the manufacturing parts of that populous country, would promote the wealth and prosperity of the nation, and of this country in particular.

RESOLVED, that opening in this manner the sources of commerce between all parts of this kingdom, and forming a conjunction with the other canals (either made or now making) a reciprocation of interests (Dublin being the center) would not only answer the public good, but the private advantage of the undertakers of the scheme; and that we will give it every support and encouragement.

CLO. ROWLEY,

For Self and Fellows.

R E P O R T, &c.

To the Right Honourable and Honourable
the River Boyne Company:

My Lords and Gentlemen,

BEFORE I submit to your consideration my promised plan of œconomy, and method for conducting the execution of canals, calculated to prevent falling into those errors and misfortunes, that not only reduce the credit, and retard the progress, but also stand as a bar to encouragement of works of the kind—I beg to lay before you some remarks on the advantages to be expected from a northern line—the impropriety of commencing with offering delusory estimates to the public—with my opinion of large and small canals, and the plans, sections and estimates of the two kinds for thirty-three miles and a half, beginning at the Royal Canal at Blanchardstown, and ending at the river Black-water, north of Kells, in the lands of Castlepole.

Most essential benefits and accommodation would be afforded to the inhabitants of that part of the kingdom that lies north of the city of Dublin, particularly those
of

of the province of Ulster, who are so numerous—for all the sea ports, all the considerable towns and villages, would have a cheap and secure interchangeable communication with each other, and the metropolis, in peace or war, safe from enemies and storms; most desirable objects to that extensive manufacturing country, by running a canal from Dublin to Black-water-town, about 70 miles; the river Black-water is navigable from thence to Lough Neagh——And with very little expense afterwards the following great navigable communication would be opened: to the East coast of Ireland by the river Liffy to the bay of Dublin—by the Boyne navigation (which the northern line would intersect near Navan) to the bay of Drogheda—from Lough Neagh by the Newry navigation to Carlingford bay——to the north-east coast from Lough Neagh by the Belfast canal to Belfast Lough, or Carrickfergus bay—to the north coast from Lough Neagh by the river Bann to Colerain——and by off-branching along the Ballyhaife river about ten miles to the east end of Lough Erne (which is nearly navigable to the town of Ballyshannon) would open a communication with the bay of Donegall to the west—and by the Grand Canal and Barrow navigation to the south to Waterford harbour—by the western branch of
the

the Grand Canal (which will shortly be completed to the Shannon) and the Limerick navigation to the south-west of Ireland. And in order that the inland towns and villages might share advantages by this general plan, canals of very small dimensions (which are made at very little expense) might be extended from the great lines to them for boats of only four tons burthen, where water cannot be obtained to answer canals of a larger scale, and wastage of locks, in place of which machinery on a plain simple construction could be substituted to raise and lower them on inclined planes at the rate of one hundred feet in four minutes, and which would also answer instead of aqueducts and imbanking across wide vallies; one horse would be sufficient to draw; and one man to attend ten of these boats chained together, the whole carrying forty tons with great ease. Thus not only the wealthy merchant and manufacturer, but the most inferior tradesman would have an opportunity of attending and disposing of his goods at the best market (let the quantity be ever so small) on equal terms; which would be a great means to defeat and put down forestalling—a most destructive species of dealing in a manufacturing country.

This

This general inland intercourse by water to the different quarters of Ireland could be accomplished by making somewhat more than an hundred miles of canal; which would stamp on the canals of Ireland the reputation of surpassing for utility, and for general communication, the canals of any nation in Europe, the Low Countries or Netherlands excepted; and which would require very few locks, as the canals and navigations already made, with which it would communicate, are so far extended towards the interior, that their remotest levels from the shore are so high as to be very little lower than the greatest altitude the country admits of for navigation, and for sure supplies of water to answer a constant trade on the large scale.

Owing to the great population of the northern counties, the nature of their manufactures and commerce, there ought to be a greater trade expected on a canal made through them than could reasonably be expected on one made in any other direction of the kingdom.—To enumerate the advantages that would result to undertakers of this canal, and the nation, would exceed the bounds intended by this report: but there is one object that cannot be omitted; an object of great magnitude and importance, not only deserving of
national

national attention, but support in a degree to surpass any concern almost whatsoever, which is supplying Dublin, and the country with Irish coals; a thing long wished for with much anxiety.—It may be asserted with great confidence, that all the contrivance, or the best plan'd projects, supported by the most profuse bounty the nation could afford, could not promote this desirable object more than making a canal from Dublin to Lough Neagh; as it is well known the best and most extensive coal-mines yet discovered in Ireland are those of Dungannon and Drumglafs, which have cost the nation already large sums, chiefly for the purpose of supplying Dublin with Irish coals.—The celebrated Mr. Young, who ended a tour of Ireland the year 1778, in treating of the Newry navigation and these collieries, says:

“ I made some enquiries, and travelled
 “ many miles to view some of the naviga-
 “ tions; and the only one which appeared
 “ to me really completed is the canal from
 “ the town of Newry to the sea, on which
 “ I saw a brig of eighty or a hundred tons
 “ burthen; the same canal is extended far-
 “ ther than that town, but stops short of
 “ the great object for which it was begun
 “ and made, viz. the Drumglafs and Dun-
 “ gannon collieries: this may therefore be
 “ classed

“ classed as incomplete relative to the ob-
 “ ject ; but as Newry is a place of confi-
 “ derable trade, finishing it so far has a
 “ merit. The great design was to furnish
 “ Dublin with Irish coals, which was pro-
 “ bably feasible ; for the seams of coals
 “ in those collieries are asserted to be of
 “ such a thickness and goodness, as prove
 “ them more than equal to the consump-
 “ tion of half a dozen such cities as Dublin.
 “ But two great difficulties were to be
 “ overcome : first, to make the navigation
 “ such that all land carriage might be
 “ saved, which was properly a public work ;
 “ and secondly, to work the collieries,
 “ which was properly private business ;—
 “ but, from the utter deficiency of capital
 “ in the hands of the individuals concerned,
 “ could never have been done without
 “ public assistance.”

As there is unquestionably an abun-
 dance of good coal in those collieries (after
 passing the grass or top veins) and in many
 other parts round the Lough, 'tis useless
 to remark, it appears to be the most proba-
 ble and certain place for supplying Dublin
 with Irish coals : if so, how much more
 preferable must an inland water convey-
 ance be, such as the intended northern
 line when completed, to that plan, which
 occupied the attention of the legislature
 for

for so many years; and towards the execution of which they granted very large sums of money.

By a northern line navigation there would be very little interruption in the carriage of coals from the moment put on board the boats until landed at Dublin: by the other plan it could not be so, from the complex nature of the carriage; first being necessary to put them into lighters at the collieries, and tracked down to Newry; afterwards shipped on board vessels to take coast-ways to Dublin, which are as liable to delays as if they were to be brought across channel from any part of the west coast of Great Britain—which would not only leave the inhabitants of Dublin in the same state as now, but much worse if depending on being supplied this course with Irish coals.—The foreseeing those impediments, and the Newry navigation not being completed in time to the collieries, were principally the causes why those valuable mines lay neglected:—but here is a plan proposed of inland water conveyance, that would give a stimulus to working them superior to any bounty that could with any degree of prudence be given for that purpose without this conveyance; a canal to the opening of the shafts from the second market in his Majesty's dominions, where the demand would
be

be regular and constant; circumstances alone sufficient to ensure the most bountiful rewards to the proprietors for working them; and on considering the services that such a canal must render the inhabitants of Dublin, particularly in this respect, it would not appear either strange or extraordinary, if it could not be accomplished by any other means, that they would lay a proportionable tax on every house to the amount of the expense; as it will appear by the following statement (which no doubt would be found underated) that in the course of a few years they would be handsomely repaid.

For some years back the coals imported into Dublin amounted to 250,000 tons per annum—let it be supposed, that there could be brought but 150,000 from the northern collieries at the average price British coals sold for, 26s. per ton,

£195,277 10 0

150,000 tons of Irish coals put into the boats at the northern collieries at 6s. per ton,	£45,000 0 0	}	160,625 0 0
Freight of 150,000 tons for 74 miles at 1½d. per ton per mile,	69,375 0 0		
Tollage on 150,000 tons for 74 miles at 1d. per ton per mile,	46,250 0 0		
			£. 34,652 10 0
Suppose the national bounty was continued at one farthing a mile,		}	11,562 10 0
A saving to the inhabitants of Dublin annually by a northern canal in the article of coal,		}	46,214 0 0

Lefs

Less tolls and freight might answer the proprietors of canal and boats by adopting the small canal, and leave sufficient profits to each; the length of carriage being so extensive, and the great carriage to and from the North and Dublin of articles that could afford more. Let it be even supposed, the produce of the collieries but half the quantity as stated above, would it not keep the price stationary, which alone would be of great benefit; for of the innumerable advantages the inhabitants of Dublin would enjoy by this undertaking, none could equal having coals at all times at an unchangeable price; and not subject to the variations they are liable to on being supplied by sea; where not only the elements, but the artful trader abroad, and the forestaller at home, combine to keep up the price, to the great injury of our manufactures, and the poor of Dublin, who are more distressed by it than can well be described; as few of them are able to put in a stock for winter whilst the price is low; consequently the miserable people buy when the article is at the dearest rate, and it falls to the lot of thousands to be deprived of the blessings and comfort of firing when they require it most.

Scarcely a year passes that the legislature and corporation of Dublin (who have
been

been always attentive to the interest of the inhabitants of that city) do not introduce some new regulation, intending to prevent extortion; and all have proved ineffectual — 'tis even supposed the wisest regulations that possibly could be suggested would not be sufficient to prevent forestalling and extortion, as long as there is no alternative but the use of foreign coal.—Therefore as it is in their power in a great degree to get rid of a deal of trouble in this way with an advantage to the city, and the nation, by promoting a northern canal, and giving a lasting employment to thousands of our labourers in producing an article, that such immense sums of money go to another country for, 'tis to be hoped at least they will give it their best support.

The price of working the northern collieries could not vary very much; the freight or expense of carriage could not vary much; nor the tolls could not vary much; so that the price of the coal when brought to market could not vary much; consequently would prove to be an undeniable remedy against forestalling and extortion in the coal trade, better than all the acts and regulations that ever will be proposed while depending on foreign produce.

It is generally supposed the making of the canals of Ireland cost more than works of the kind ought; which reduces to a question, whether it be owing to want of judgment in striking out the plans, or in directing the execution of them, or from more reprehensible causes; but whatever the misfortune proceeds from, or the ideas entertained of it, it would be grievous indeed that the most useful works in the kingdom should be neglected, and deprived of a continuation of the support and encouragement of the nation; for although there may be some foundation for those opinions, surely it is not beyond the abilities and judgment of people in Ireland to strike out, and pursue as good and oeconomic plans for making canals, as those of any other nation.

Where a canal is intended to be carried on through a country, if a choice of the best ground for navigation is traced out, an exact section made of it, with a candid just estimate of the work, and a prudential system struck out for conducting the execution of it, all of which it should be imagined could be done in Ireland, as well as in China, Holland or Great Britain, then why not make canals in Ireland as cheap as there, or any other country, where labour and materials are not cheaper.

Commence

256254

Commence with the most meritorious undertaking, that would prove of the greatest national utility when completed; but let it get into the least degree of disrepute by accident or otherwise, it is more difficult to restore it to its wanted credit than can well be conceived; it may be so with regard to the management of the canals of this country; but as it is commonly apprehended when things are at the worst state they are then likely to resume a better, which we hope is the case of the inland navigation of Ireland; and that henceforth the dark cloud of censure and discredit it lies under will remove, by adopting more œconomical and useful plans. There is an evil (jobbing) that deserves the greatest reprobation; and if exists ought to be got rid of; otherwise it will for ever remain a disgrace and obstruction to Irish industry, and promotion of its canals; I admit it is difficult to check its growth if it once takes deep root; but then, it may not be impossible to adopt a measure to prevent the practice.—We have been highly aspersed for this shameful abuse, in a work, entitled “The History of Inland Navigation,” published by Mr. John Philips in the year 1793: he observes in his description of Irish canals:

“ Have something to carry before you
 “ seek the means of carriage. I will ven-
 “ tur

" ture to say, that if the Grand Canal was
 " entirely completed, the navigation of it,
 " including whatever the country towns
 " took from Dublin, would prove of such
 " beggarly account, that it would then
 " remain a greater monument of folly, if
 " possible, than at present. Some gentle-
 " men that I have talked to on this subject
 " have replied,—It is a job : it was meant
 " as a job ; you are not to consider it as
 " a canal of trade, but as a canal for public
 " money. But even this, though advanced
 " in Ireland, is not upon principle. I an-
 " swer, that something has been done—
 " Fourteen miles, with numbers of locks,
 " quays, bridges, &c. &c. are absolutely
 " finished, though only for the benefit of
 " eels and skaiting. Why throw this mo-
 " ney away ? Half what these fourteen
 " miles have cost would have finished the
 " Newry navigation, and perfected the
 " Dungannon collieries. Admit your ar-
 " gument of the job. I feel its weight ;
 " I see its force ; but that does not account
 " for the sums actually expended. Might
 " not the same persons have plundered
 " the public to the same amount in exe-
 " cuting some work of real utility ; from
 " which something else might have resulted
 " than disgrace and ignominy to the na-
 " tion.

B

As

“ As to the other navigations, there is
 “ in general this objection to be made to
 “ them all : however necessary they might
 “ be, they are useless for want of being
 “ completed: three-fourths are only begun.
 “ The gentlemen of the neighbourhood
 “ of them have had interest enough in the
 “ navigation board to get a part only voted;
 “ and from the variety of undertakings
 “ going on at the same time, all are, for
 “ the same reason, incomplete. The ad-
 “ vantage to the public has been more
 “ trifling from all, than from a single one
 “ finished.—Sorry I am to say, that a his-
 “ tory of public works in Ireland would
 “ be a history of jobs, which have been,
 “ and will prove of much worse conse-
 “ quence than they may at first appear.—
 “ They have given a considerable check
 “ to allowing grants of money. Adminis-
 “ tration, seeing the uses to which it has
 “ been applied, has viewed these misap-
 “ plications, as they are esteemed, of the
 “ public money with a very jealous eye.
 “ They have been greatly curtailed ; un-
 “ til another very questionable measure,
 “ the bounty on the inland carriage of
 “ corn to Dublin, demand so much, as
 “ to leave nothing for jobs of a dif-
 “ ferent sort. That measure may be re-
 “ pealed, and the money applied to it will
 “ be at the disposal of government, for
 “ the

“ the common purposes of it or some na-
 “ tional improvement of a more decisive
 “ nature—the latter may after so many
 “ instances be rejected, for fear it should
 “ become a job. How melancholy a con-
 “ sideration is it, that in a kingdom which
 “ from various causes had been so fortu-
 “ nate as to see a great portion of public
 “ treasure annually voted for public pur-
 “ poses, that same treasure should be so
 “ abominably misapplied, and pocketed
 “ by individuals, as to bring a ridicule and
 “ reproach upon the idea of such grants.
 “ There is such a want of public spirit,
 “ of candour, and care for the interests of
 “ posterity in such a conduct, that it can-
 “ not be branded with an expression too
 “ harsh, or condemned in terms too point-
 “ ed; nor does it less deserve our detesta-
 “ tion, should it be found to flow from
 “ political and secret motives, which aim
 “ at burthening the public revenues to
 “ render private factions of more impor-
 “ tance.”

How far Mr. Phillips found himself war-
 ranted to censure so severely the business
 of the Grand Canal at the time he published
 his work, about the year 1793, is some-
 what unaccountable; for it appears the
 information he had of it rather related to
 about the year 1785; as he says in a far-

ther account of that canal, that, “ if it
 “ was finished to the river Barrow lord
 “ Wandesford would make more of his col-
 “ leries of Castlecomer than he then did :”
 which alone is a strong proof he had not
 been acquainted with the great forward-
 ness of the canal ; or that either prejudice
 or some less laudable motive led him to
 give this ridiculous description of a work
 that in an eminent degree bids fair to sup-
 port the credit of Irish inland navigation.
 It is indeed generally acknowledged money
 was laid out both profusely and injudici-
 ously before this period on those works,
 from whence he might have had some rea-
 son for entertaining ideas of jobbing ; if
 that was what he only intended to allude
 to, it would be unjust to charge him with
 the design of discouraging the promotion
 of canals in this kingdom by giving a par-
 tial description of them, or with the evil im-
 pression which the circulating and reading
 his book has made on the minds of the peo-
 ple of this country ; for many who live re-
 mote from canals at present, and unac-
 quainted with the transactions belonging
 to them, and who would be inclined to
 lay out their money, and render every sup-
 port towards forwarding useful works of
 the kind in their neighbourhoods, on read-
 ing Mr. Phillips’s remarks on the inland
 navigations of Ireland, would rather be
 deterred,

deterred, and shrink back from being concerned, or from affording any assistance, even though the best and most judicious rules and plans ever digested were proposed for conducting and making them; which would be a lamentable circumstance as well for posterity as the people existing—There is no doubt but a great deal of Mr. Phillips's remarks on our canals are shrewd and sensible, and well worth attention, as they bear some degree of truth, and prove he had no small share of information, not only of the state of our works, but of our political views and national proceedings with respect to inland navigation: but he has undoubtedly misrepresented the state the Grand Canal lay in at the time he published his history of Inland Navigation—for, far from its being confined to fourteen miles, there were upwards of forty completed, partly in a south-west direction, crossing the river Barrow at Monasterevan, and to Athy, where it again communicates with the Barrow, by which a navigable intercourse is opened between Dublin and the southern parts of Ireland, and to Waterford harbour; from whence an extensive trade has been since carried on with Dublin, and a likelihood of an increase to surpass the utmost expectations of the proprietors and the public—This most important point was not alone executed, but
the

the principal part of the Shannon line also; and we may rest with great confidence in its being speedily completed, if the present directors continue their assiduity; to whom we and posterity must feel ourselves indebted for their spirited and zealous exertions in promoting an object of such great utility; and rendering Mr. Phillips's monument of folly, a lasting monument of Irish wisdom and industry, by advancing nearly to a state of perfection the Grand Canal, which may be truly said to be the most useful work yet undertaken in Ireland; and far from being a disgrace or ignominy to the nation (as he terms it) is now sufficiently proved to the contrary by the number of advantages already derived from it.

Parliament liberally granted very large sums of money towards making canals, and no doubt would have given more, and even be as bountiful as the nature and importance of the object deserves, but for the apparently low, delusive, and troublesome manner applications have been made for parliamentary aid: this kind of delusion does not commence here, but with the very existence of the institution; which may be considered a principal cause why our canals are checked in their progress, and lose their credit in the estimation of the public; for it has been observed, that
in

in order to set forward business of this kind in Ireland, plans and estimates were made so negligently or designedly that only one-half or there-about of the expense that such works require has been commonly set down; perhaps for the purpose of inducing the public to subscribe, and to obtain parliamentary bounty more readily; which is a most mistaken idea, as it tends more to injure than serve the design, and sometimes ends in a total destruction of it, to the no small loss of the public. 'Tis well known that so far were the canals of Ireland from being compleated for the amount of the original estimates, which were laid before parliament for their concurrence prior to granting bounty, that not one of them could be compleated for double the amount of the estimates, which was a principal cause in reducing the credit of our canals, and opened a wide field for aspersions and discontent in the management of them; and hence arise many difficulties in the way of the proprietors fulfilling their engagements to the legislature and the public:—The resort is to an additional subscription, founded on the hopes of farther parliamentary aid, or issuing debentures bearing an interest that in the end swallows up the principal; most discouraging circumstances to making canals by subscription.

Many

Many from motives of interest were led to subscribe by a prospect of having a cheap-made canal, and a profitable return for their money; on being disappointed in their supposed well-founded expectations, would not only refuse to contribute more, but very likely be foremost to run down the credit of the business.

Parliament on being troubled with repeated petitions for more support to carry on the same work, become doubtful of the true application of the former grants; and let the petitions be ever so explanatory, and well framed for conveying the sentiments and wishes of the petitioners, accounting for all the unforeseen accidents, &c. &c. that they could introduce as a foundation to ground a claim on, all will not be sufficiently satisfactory to prove to an enlightened senate that the business was conducted with sound judgment, prudence or candour; and concludes with a loss of the confidence reposed in the undertakers by parliament, who intrusted so much of the public money to their management; which in a great degree may be attributed to fictitious estimates, which tend to destroy what they were unwisely made to promote.

Therefore

Therefore the more circumspect petitioners are in laying just and correct estimates before parliament the better, where they hope for such support as hath been heretofore granted to undertakers of canals; for if the works are completed for the amount of the estimates, the credit of the undertaking will be upheld in the estimation of the public; troubling parliament with repeated applications for aid dispensed with; the value of stocks not so liable to change for the worse; and subscribers be more certain of interest for their money.

As you are now about to support and encourage the inland navigation of the north of Ireland by first making a main trunk from Dublin to Lough Neagh, I deem it to be necessary for you to be extremely circumspect with regard to the plans and estimates you adopt and lay before parliament. In undertakings of this kind, particularly in so small an island as this, where there is such variety and unevenness in its surface, and so difficult and expensive to turn the course of its principal rivers into supplies for navigation, the most serious and attentive consideration should be given to the formation or construction of its canals; and I consider every public work, but more particularly canals, which require such large sums to make them,

them, should be proportioned as nearly as possible to the wealth, circumstances and convenience of the state; and what the state might reasonably be expected to arrive to by the occurrences of future events, as well as what may result from new sources of commerce, which will open by carrying them into effect—The cheapest and easiest mode of conveyance should be the principal aim in all such undertakings; I do not presume to confine it to any specific rule or principle; but I contend that the plan by which articles are conveyed cheapest and most readily, and answers all the purposes of navigation, is best;—and if there was a possibility of moving commodities from place to place cheaper by any other method, and to be equally as accomodating as by water, I do think it ought to be made choice of, even though it should appear ever so novel; but we must wait the result of the farther progress of invention for that, and content ourselves with resorting to the best mode of water carriage for the present: and I believe very few will be found to differ with me in acknowledging that the plan ought to be preferred which is most easy and readily attained; provided, as I have before said, it answers all the purposes (that can reasonably be imagined) of inland navigation.

We

We have now found by experience the great difficulties of making large canals on the lock principle, the expense being so great as to exceed the ability of the nation, to which in some degree may be attributed a cause of the very slow progress of canals in Ireland. The original intention of making large canals was that small vessels fit to navigate the seas could take from and bring up their cargoes to the central and other parts of the country, which was found too inconvenient for practice; yet a continuance of the system has been pursued, as well as the nation could afford; I may say not so much to its advantage.—Mr. Robert Fulton, who published a treatise on the improvement of canal navigation so late as April 1796, recommends the making of small canals.—He says :

“ It has been a prevailing opinion, and
 “ many canals have been constructed, and
 “ are executing on the principle, that to
 “ form them sufficiently large to receive
 “ coasting vessels, river, or forty-ton boats,
 “ would produce a considerable advantage,
 “ by saving the transfer of cargoes to
 “ small boats.

“ While there was no alternative but
 “ forty or twenty-five ton boats, there
 “ might

“ might be some reason in such a practice,
 “ as the difference in constructing the ca-
 “ nals for such boats does not appear to
 “ be materially great; but if we estimate
 “ a canal for a forty ton, and then for a
 “ four ton boat, the saving by adopting
 “ the latter is so important as to ren-
 “ der the expense of transfer inconsider-
 “ able.

“ In every situation where a canal is to
 “ be formed for forty-ton boats, one third
 “ of the sum necessary for that purpose
 “ would pay the expense of a canal for
 “ boats of four-tons. Hence if a canal
 “ company are about to expend 300,000l.
 “ where 100,000l. would answer the pur-
 “ pose, 2 10,000l. per annum is sunk to
 “ save transfer. It must be observed that
 “ in all goods passing inland from the coast
 “ there is only one change of cargo, viz.
 “ to the small boat; when the small boat
 “ unloads up the country, the expense is
 “ the same as if the large had proceeded
 “ to the same point. In all goods passing
 “ to the rivers or coast, one transfer into
 “ the large boat, the first reception into
 “ the small boat being the same as into
 “ the large one. Hence all goods going
 “ up the country may be taxed two-pence
 “ per ton, the price of transfer, and the
 “ same on all goods descending: it must
 “ also

“ also be considered that although a canal
 “ may be connected with the river, or
 “ ocean, the principal part of the trade
 “ will not require transfer, being taken
 “ up and deposited in various places on the
 “ passage, without descending to the river
 “ or the ocean.

“ The trade of a canal must indeed have
 “ a very material connection with a river,
 “ where there is occasion to transfer five
 “ hundred tons per day; which at two-
 “ pence per ton, allowing 280 working
 “ days in the year, would amount to
 “ 1166l. 13s. 4d. per annum; yet to save
 “ this the principal of 10,000l. per annum
 “ is sunk.

“ By adopting small boats the clear gain
 “ to the company would be 8,833l. 6s. 8d.
 “ per annum, even provided they paid the
 “ expense of transfer; but I conceive this
 “ expense will ultimately fall on the freighter,
 “ or he must have an admirable alternative much superior to land carriage,
 “ if the two-pence per ton for transfer
 “ can prevent him sending his goods by
 “ the canal; and therefore if the freighter
 “ or carrier pays the transfer, the 10,000l.
 “ per annum is a clear saving to the company.

“ This

“ This reduces a decision on the ques-
 “ tion of the adoption of small boats in
 “ various situations to a very simple cre-
 “ terion. Let the interest of the saving
 “ made by adopting a small canal instead
 “ of a large one be compared with the
 “ expense of transferring cargoes: keep-
 “ ing this in view, that the expense of
 “ transfer will fall on the freighter or car-
 “ rier, who can have no alternative to re-
 “ lieve him from this mode of conveyance,
 “ not even if a large canal ran to the same
 “ point. No large canal can rival a small
 “ one for evident reasons:—Suppose for
 “ instance, a large and small canal run-
 “ ning side by side, the large canal costing
 “ 300,000l. (or in proportion three times
 “ the expense of the small one) and the
 “ small one 100,000l. one penny per ton
 “ per mile to the small canal would be as
 “ good interest as three-pence to the large
 “ canal; consequently the small canal
 “ company could lower their tonnage so
 “ as to favour the freighter, and render
 “ the expense of transfer of no conse-
 “ quence; they would even grow rich by
 “ lowering the tonnage; which would
 “ draw the trade from the large canal, and
 “ leave it a stagnant and useless pool: and
 “ I even do not hesitate to prognosticate
 “ the annihilation of lock canals in the
 “ progress of time.

“ The

“ The facility and cheapness of the
 “ small canal invites and encourages con-
 “ nection from every quarter ; but the dif-
 “ ficulty of conducting large boats through
 “ a country precludes, or at least most
 “ materially limits, their extension.

“ Considering these circumstances, I con-
 “ ceive there are few situations which can
 “ warrant a canal for large boats, short
 “ cuts uniting the arms of rivers, or thro’
 “ a flat country to an adjoining town,
 “ where there is no great expense, and
 “ much to be gained, the latter may be
 “ adviseable.

“ But to view internal navigation on
 “ the broad scale of national improvement,
 “ I conceive the river navigations should
 “ be extended as far as convenient, but
 “ the moment the course of the river is
 “ left to direct water conveyance towards
 “ the interior country, small boats should
 “ commence. Of the canals already cut,
 “ or in such forwardness as not to admit
 “ of an alteration, I consider them in the
 “ same view as rivers ; but all future
 “ works to be guided by the before men-
 “ tioned criterion, of comparing the ex-
 “ pense of transferring cargoes with the
 “ interest of the money saved, by adopt-
 “ ing the small instead of large boats.

“ In

“ In proportion as a canal is large the
 “ expense on all its parts will increase:
 “ tunnels, locks, reservoirs, aqueducts,
 “ bridges, land, and digging, are usually
 “ allowed to be one-third more expense in
 “ a canal for forty-ton boats, than in those
 “ constructed for boats of twenty-five
 “ tons; twenty-five ton boats, also, re-
 “ quire a canal of greater dimensions than
 “ boats of four tons: in a word, it is evi-
 “ dent that the expense of a canal will
 “ decrease in proportion as the boats are
 “ reduced; the object therefore is to find
 “ the proper medium. Four-ton boats
 “ twenty feet long, four wide, and two
 “ feet ten inches deep, will contain lime,
 “ lime-stone, coals, lead, iron, ore, grain,
 “ flower, iron-ware, pottery, hogsheds,
 “ boxes, bale-goods, hops, cotton, wool,
 “ &c. &c. and all bodies ponderous and
 “ compact, as well as boats of any size,
 “ whatever they will contain.

“ Considering the articles enumerated,
 “ and deliberating on the size and weight
 “ of other commodities, I conceive there
 “ are few things excluded; and the ques-
 “ tion is, whether a company should ex-
 “ pend one hundred thousand pounds in-
 “ stead of fifty thousand? Thereby sinking
 “ two thousand five hundred pounds per
 “ annum, in order to accommodate the few
 “ things

“ things which boats of these dimensions
 “ cannot contain, when, in all probability,
 “ the articles accomodated would not in
 “ tonnage produce 100l. per annum.—
 “ Thus most things may be conveyed in
 “ small boats; and small boats diminish
 “ the expence of canals.”

These observations of Mr. Fulton appear to be highly reasonable, and prove he had enlightened ideas of his subject; but demonstratively so by the great improvement he has made in the small canal system; which, when more generally and better understood, will be encouraged and adopted in preference to the present unnatural and expensive one: unnatural I call it, as I consider it in the light of endeavouring to make navigable seas in a mountainous country, where nature objects and refuses its aid to that general intercourse that inland navigation could afford in a more simple way. The supplies of water for such large canals can be had only in a few partial situations in all countries from large rivers; which would not be the case with small canals, as they require not more than a fifth of the water necessary for the large, and might be constructed so as to take less, and therefore be made almost in any direction; and in consequence of their long levels the small

C

streams

streams of the country would sufficiently supply them; for which reason they can be run at higher altitudes than the large canals would admit of, and thereby get clear of, and surmount obstacles, that impede, and will ever narrow the limits of large canals.

The same trade can be carried on by the small, as the large canal; only by adding to the number of boats; a man and horse can manage and draw as much on the small, as the large; the machinery at an inclined plane are more complex than a lock, but one operation on an inclined plane may be made to answer the same passing through a country as half a dozen, or a dozen locks (which may be seen by the sections) a medium plane to give a rise from one level to another, that would require six locks to ascend to the same height, could be erected for the price of one lock: the same attendance to a lock is only required to that of a plane; and the expense of keeping it in repair is not much more (if any) than that of a lock; but of all things the ease and convenience in using small boats instead of large ones ought alone to induce the making of small canals. Mr. Fulton remarks,

That

“ That farmers, manufacturers, &c. &c.
 “ may have their private boats, which they
 “ may dispatch at pleasure with the facility
 “ of a cart, without waiting for an associa-
 “ tion of interests to compose a cargo as in
 “ large boats ; and thus the small boats pas-
 “ sing machinery are suited to various kinds
 “ of trade, situations and circumstances ;
 “ and have a direct tendency to draw almost
 “ the whole carriage of a country into the
 “ channels of canal conveyance :—though
 “ the canal is small, and suited to small
 “ trade, it is also adequate to a trade of the
 “ first importance.”

I have levelled and marked out agree-
 able to your orders lines for two different
 kinds of canal ; one for boats of sixty tons
 burthen, and the other for boats of four,
 from the Royal Canal at Blanchardstown,
 by Dunboyne, the Black-bull, Dunshaugh-
 lin, Trim, and by the edges of the bogs
 of Tullaughanstown, Boremeen, and Al-
 linstown, to Kells, and to the river Black-
 water, through the lands of Castlepole
 north-west of Clevin's bridge, thirty-three
 miles and a half : and made the annexed
 estimates, which I am led to think are so
 correct, that the works, by judicious and
 careful management, can be completed for
 the amount of them.

C 2

I have

I have also tried for a shorter line, from the Royal Canal near Kilcock to Trim, on the large scale; where I found that the lowest part of the saddle of ground, which should unavoidably be cut through by going that line at the bog of Rainstown, and which is of great breadth, was forty-four feet higher than the upper fill of the 17th lock of the Royal Canal, the only level a junction could be formed with by that course; but even suppose this difficulty did not interfere, another of much worse consequence arises, that of being obliged to depend on a supply of water from the Royal Canal for the trade of the northern line, as you should most unquestionably lock down from that level to Trim, or to any other part of the river Boyne you would attempt to cross; as the banks of that river are considerably lower than it; and by keeping more to the west to avoid the deep sinking along the river Boyne, the consequence as to the supply is the same; and after making twelve or thirteen miles of canal, suppose from Trim to near Clonard, where the junction should be made, you are then farther removed from Dublin than at Trim, or a direct line towards the North. The same objections are to making small canals in those situations, along with a great additional inconvenience;

venience; the transferring of cargoes at the junction to and from the large and small boats; besides the delays and time lost waiting for each other; for the course of the Royal Canal is such that we could not expect its supplies to be adequate to a constant northern trade carried on by small boats of four tons burthen; where a single one passing through their locks would require more water than a boat of 60 tons; the large boat displacing more water at a lock than a small one in proportion to its weight and size: the quantity therefore wasted by locking up and down small boats would be so considerable, as at once to preclude the passing of small boats on that canal; which would undoubtedly occasion an interruption in the trade of small boats, to the utter obstruction of the convenience and benefits the small canal system could afford. It is by no means circumstanced as the Boyne navigation, where one of the largest rivers in Ireland is its supply.

Taking into consideration the great length of deep sinking at Rainstown to go the Kilcock line, the want of certain supplies of water; and viewing the number of delays, disappointments and expense of transferring cargoes, with an additional
expense

expense of two-thirds more tonnage for sixteen miles on the Royal Canal, in consequence of the disproportion of the expense of making the two canals; and a round of nearly five miles more in length, than by running a small canal from the back of the Linen-hall, crossing the Royal Canal, and so on th the Black-bull, Parsonstown, and to Trim: for these reasons, and the more ease and convenience to the coal and linen trades, I presume to recommend this last plan: for although there is a greater length of cutting, the country is so answerable for small navigation, that it ought to over-balance any consideration in point of the difference of expense (if there would be any) to that of uniting with the Royal Canal above Kilcock.

33 miles of canal for sixty ton boats
from the Royal Canal at Blanchardstown
to Castlepole, would cost, as appears by the
annexed estimate

— £214,855 15 7

33½ miles of canal for four ton boats,

81,725 — 2

A saving by making a small canal in }
33 miles length, —

£133,130 15 5

One

One man and one horse
setting off from Dublin to
Kells three days in each
week, allowing two days
to perform the passage;
and the same setting off
from Kells to Dublin
with the usual number of
small boats carrying 40
tons, being the work only
of two men and two
horses through the year,
at 1d. per tun per mile,
which is but one-third of
the tolls received at the
large canals,

£ 1,742 — —

£ 4,297 — —

One passage boat set-
ting off from Dublin, and
another from Kells each
day, containing ten pas-
sengers at 7s. per pas-
senger,

2,555 — —

Estimate of $33\frac{1}{2}$ miles of
canal for four-ton boats

81,725 — 2

Deduct one third for par-
liamentary bounty,

27,241 13 10

Subscription required,

54,483 6 4

Which at 6l. per cent. per
annum to subscribers,

3,279 — —

A balance after the interest of subscription
to pay for stables, horse-hire, drivers,
and the interest of 400l. for passage boats,
&c. &c.

£ 1018 — —

The produce of the tonnage from the
labour of one man and horse afterwards
would

would be more than sufficient to keep the works in repair, and pay officers salaries, attendance, &c. &c.

It would be unreasonable not to admit of a trade taking place on this canal; and it would be equally as unreasonable to calculate on less than what is stated above; for if a trade of any kind, there must be as much as to require the labour of three men and three horses, and two small passage boats; the profits of which would afford at least six per cent. to the subscribers—But if the canal was completed to Lough Neagh, the collieries of Dunganon, Drumglass, and those near Bailieboro, worked to supply Dublin, and the other towns by which it would pass with coals; and to levy tolls on all back carriage from Dublin, equal to two-thirds of what is paid on the other canals, I do not hesitate to say, it would produce by far a greater interest than is usually received on canal subscriptions; particularly when I view and am sensible that the part already laid out would alone produce a great profit; though I think it will prove to be the most expensive part of the whole line to Lough Neagh.

On examining the most authentic recorded computations that have been set forth

With to induce the making of canals in Ireland, I found that none had ever been laid before the public that was not so obscure and unintelligible, as to confound rather than enlighten subscribers in the way to estimate the real advantages expected from so serious an expenditure as canals require. A thorough conviction of the purity of your intentions, encouraged me to lay those plain statements before you, which I trust will not be found very erroneous; and the more they excite your enquiry and reflection, or that of the public (if submitted to them) the greater my gratification, as all must be convinced, that subscribers to this canal will receive extraordinary interest for their money, and that fallacious statements, or abstruse and fictitious calculation, were not intended by you, or made to impose on the understanding.

I hope to have it in my power to lay before you within the time proposed the plans and estimates of the whole line from Dublin to Lough Neagh.

I am, with the greatest respect,

My Lords and Gentlemen,

Your most obedient,

And most humble servant,

DANIEL MONKS

D

I have been thinking of you very much lately
and wondering how you are getting on.
I hope you are well and happy.
I have been very busy lately
but I have managed to find some time
to write you a few lines.
I have been thinking of you very much lately
and wondering how you are getting on.
I hope you are well and happy.
I have been very busy lately
but I have managed to find some time
to write you a few lines.

I hope to hear from you in a few days.
I have been thinking of you very much lately
and wondering how you are getting on.
I hope you are well and happy.
I have been very busy lately
but I have managed to find some time
to write you a few lines.

I have been thinking of you very much lately
and wondering how you are getting on.
I hope you are well and happy.
I have been very busy lately
but I have managed to find some time
to write you a few lines.

I have been thinking of you very much lately
and wondering how you are getting on.
I hope you are well and happy.
I have been very busy lately
but I have managed to find some time
to write you a few lines.